

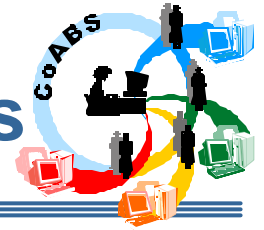
The DARPA CoABS Grid Jini Performance Experiments

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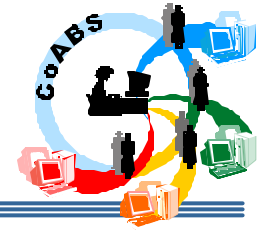


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DARPA CoABS Grid Scalability Experiments



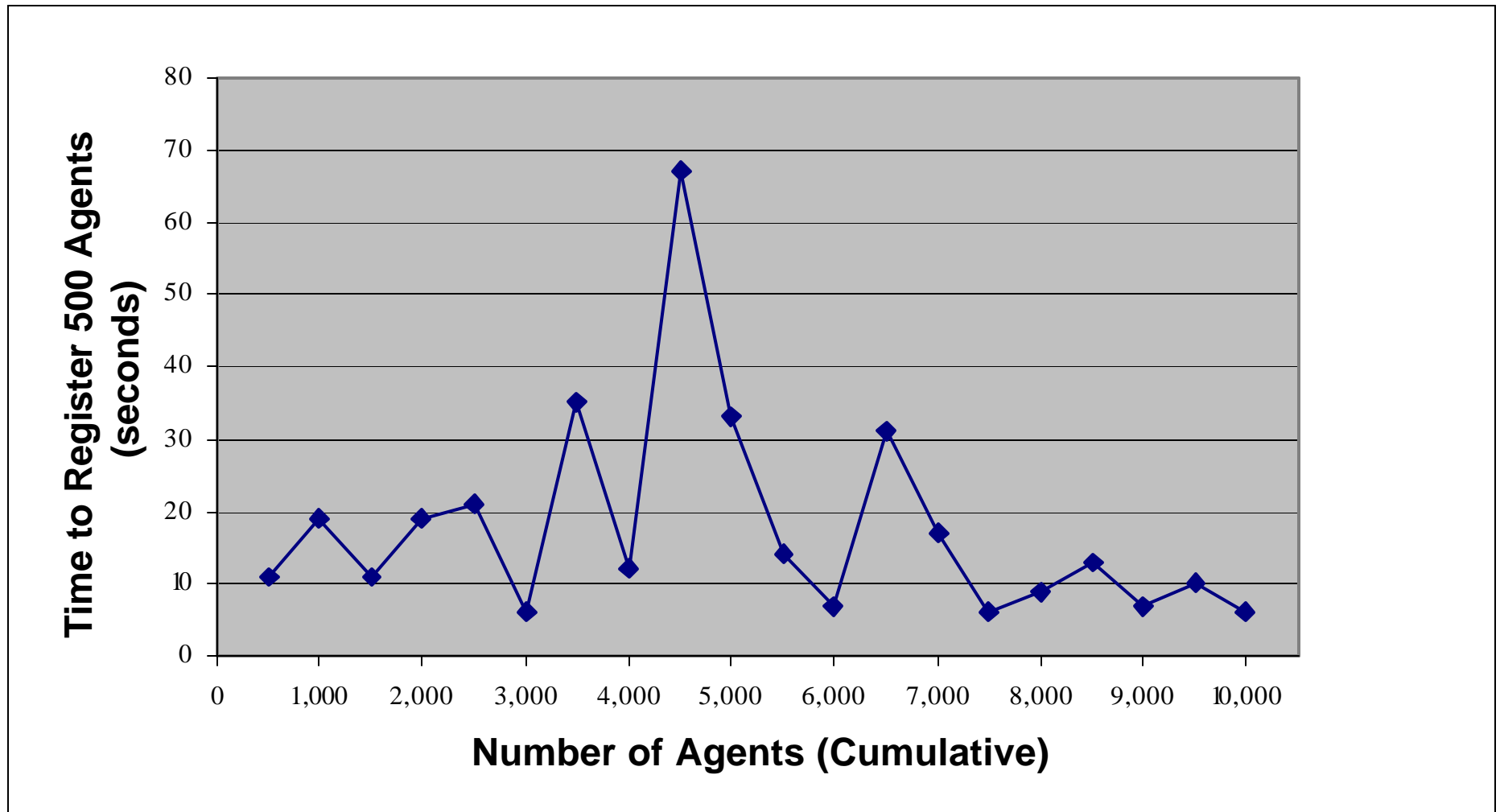
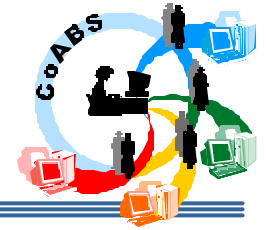
- ▶ Investigated scalability of Jini Lookup Service (LUS)
 - used as registry for Grid services
- ▶ Two parts to investigation
 - How long does it take to register an agent?
 - How long does it take to look up an agent?
 - Lookup by Entry for initial experiments
 - LUS is populated with 500, 1,000, 1,500 ...10,000 agents
- ▶ Timing measurements made on agent machines
 - Agent machine speed and network latency affect results
 - Results are therefore approximate, but illuminating
- ▶ Further experiments are in progress to refine/extend original results



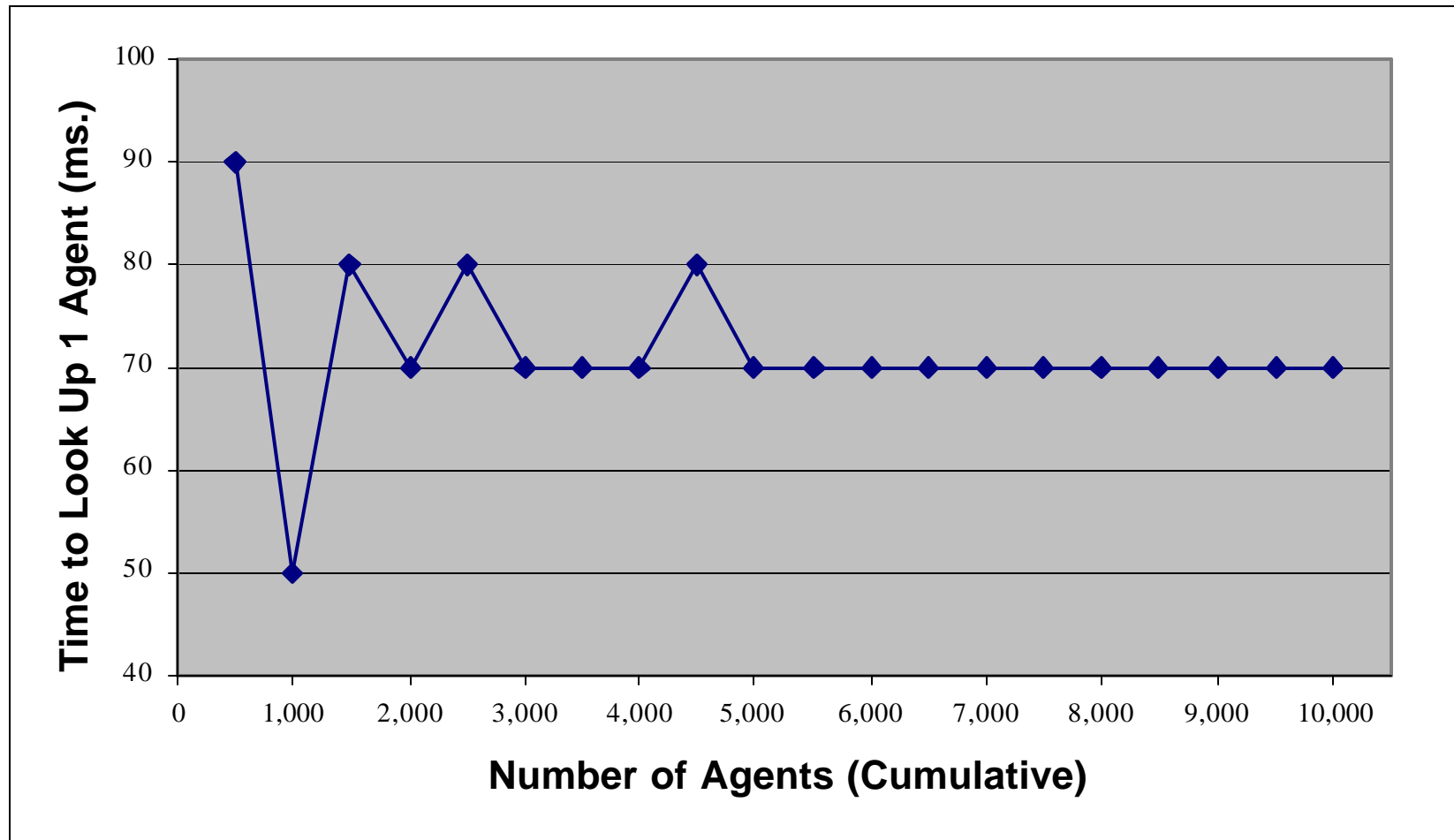
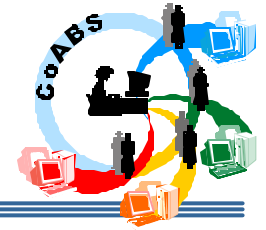
Initial Experimental Findings

- ▶ Grid scalability excellent to 10,000 agents
- ▶ Time to register agents not affected by number of agents already registered
- ▶ Lookup of 1 agent and lookup of 0 agents not affected by number of agents registered
- ▶ Time for lookup of many agents increases proportionally to number of agents returned by the lookup
- ▶ Time to lookup multiple agents is independent of number of agents registered
- ▶ Full results available at <http://coabs.globalinfotek.com>
- ▶ Jini LUS has even better performance than these experiments show, since the Grid code checks for agent reachability before returning a reference for each agent found

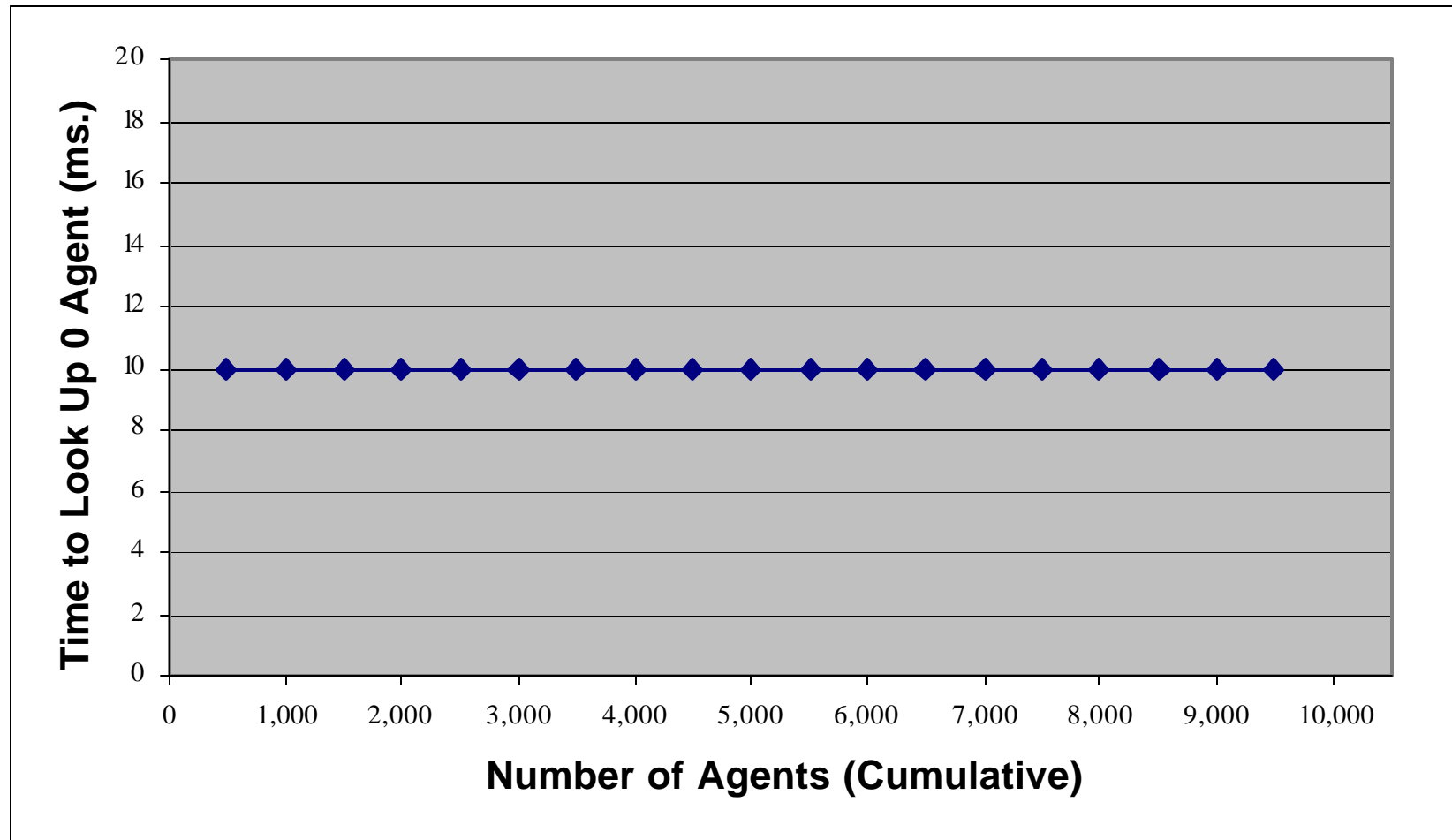
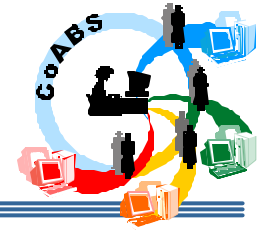
Time to Register Agents



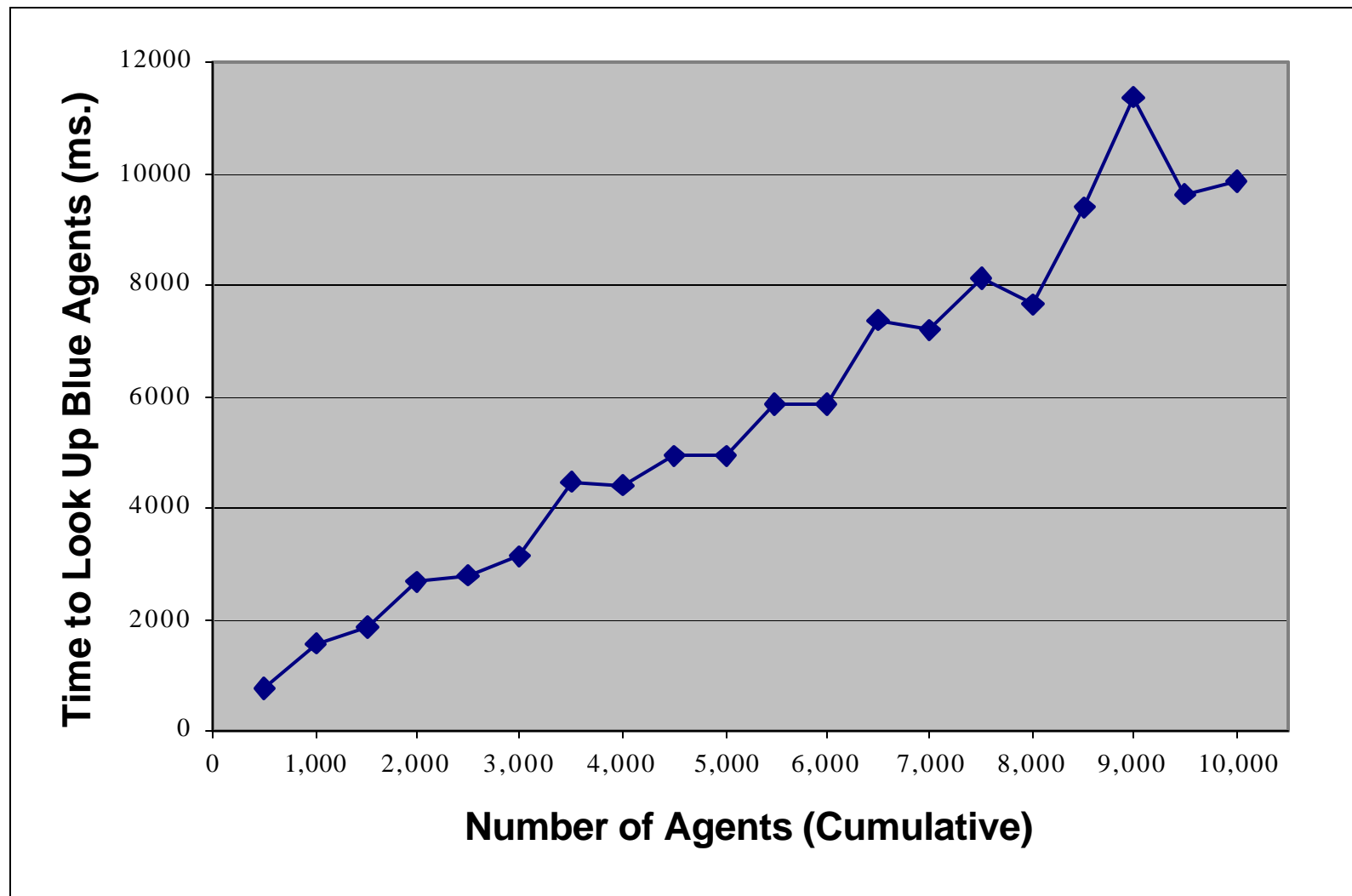
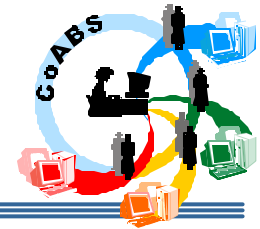
Time to Lookup One Agent



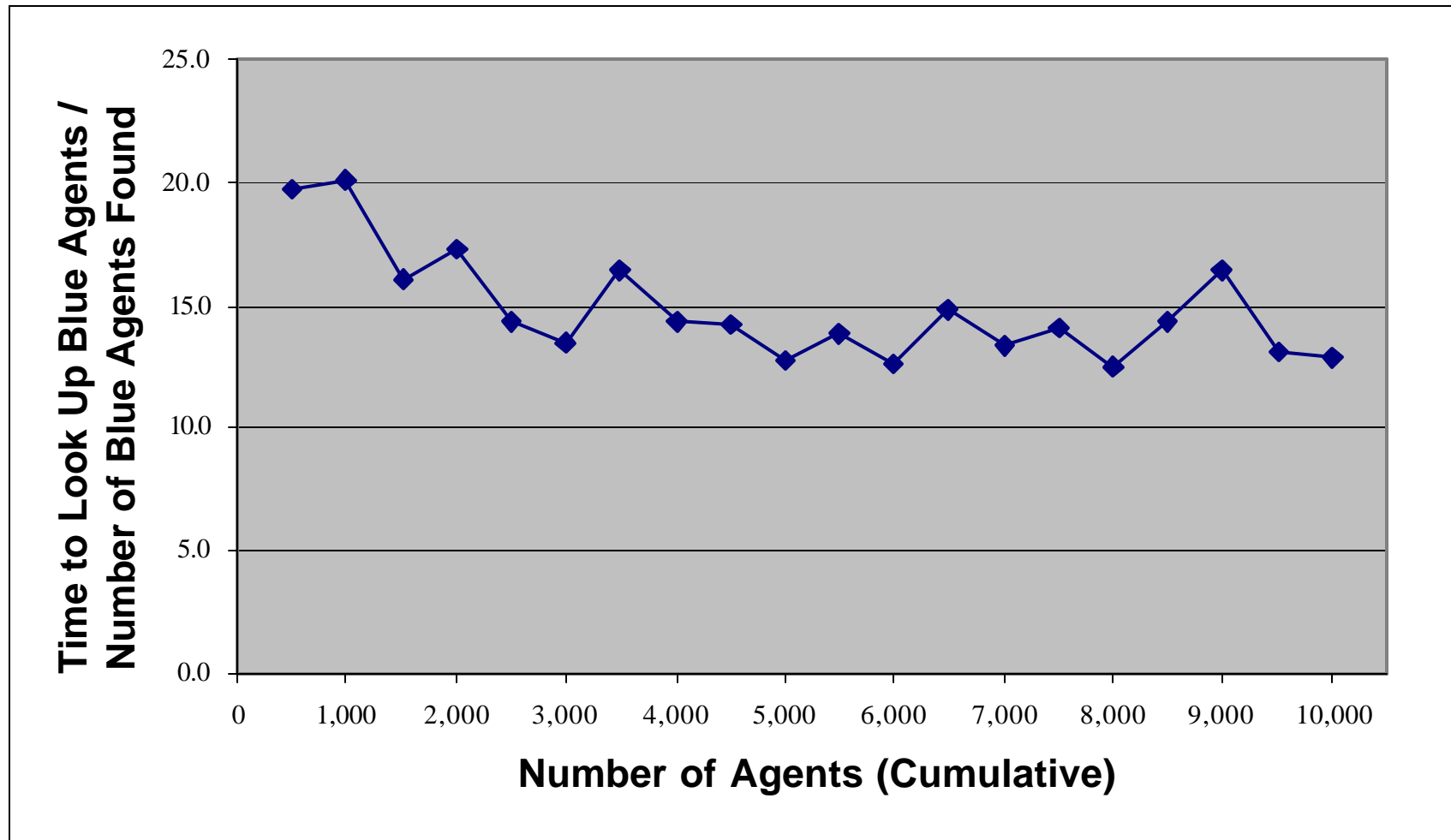
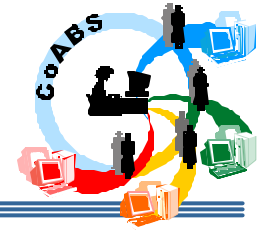
Time to Lookup Zero Agents



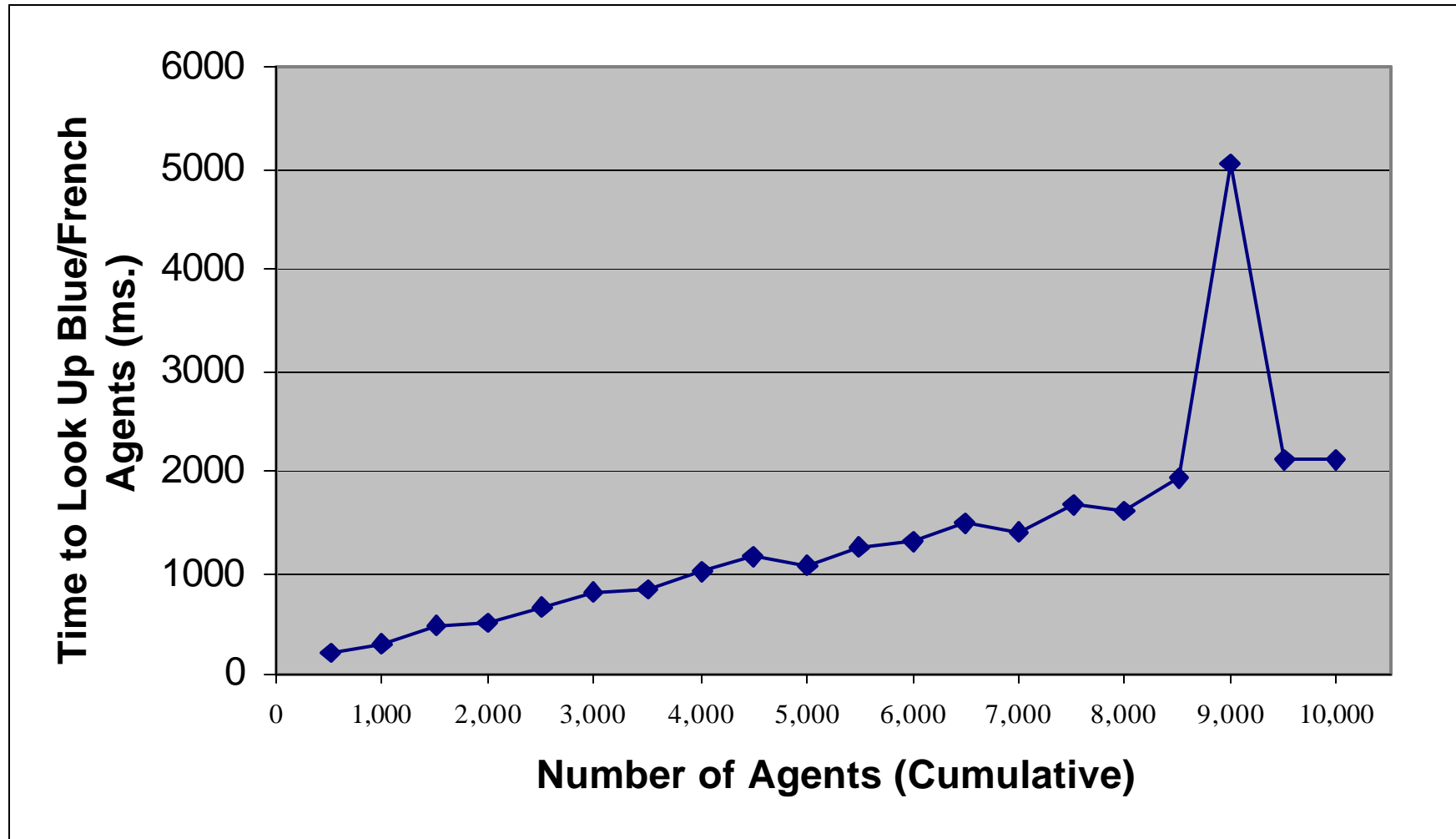
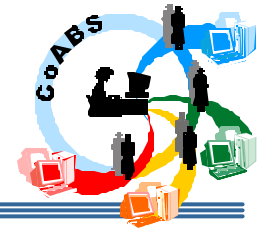
Time to Lookup Blue Agents



Time to Lookup Blue Agents Divided by Number of Blue Agents Returned



Time to Lookup Blue/French Agents



Time to Lookup Blue/French Agents Divided by Number of Agents Returned

